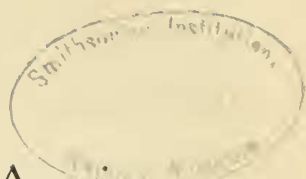


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A SYNONYMIC LIST OF JAPANESE CHRYSOPIDÆ, WITH
DESCRIPTIONS OF ONE NEW GENUS
AND THREE NEW SPECIES.

By WARO NAKAHARA.

In the Journal of the College of Agriculture, Tohoku Imperial University, Vol. VI, for August, 1914, Mr. H. Okamoto has published a paper entitled "Über die Chrysopiden-Fauna Japans," enumerating 31 species of Lace-winged flies as occurring in Japan and Formosa. I regret to say, however, that I have found that his view cannot be accepted in some cases, and at the same time I was able to discover some new forms.

This paper will include a synonymic list of Japanese Chrysopidae (excluding those that are confined to Formosa, Loo-Choo, or Bonin Island), to be followed with descriptions of new forms.

To show the points of more or less difference between the opinions of Okamoto and of myself, I present the following comparative table of the forms described or mentioned by him (left column) and those listed by me in the present paper (right column):

Nakaura matsumaræ (Okamoto) = *Apochrysa matsumaræ* Okam.
Nothochrysa olivacea Gerstaeker = *Parachrysa* (n. g.) *olivacea* (Gerst.)
Chrysopa intima M'Lach. = *Chrysopa perla intima* M'Lach.
Ch. nigriceps Okam. = *Ch. perla* L.
Ch. sapporensis Okam. = *Ch. formosa* Brauer.
Ch. inornata Matsumura = *Ch. vittata* Wesm.
Ch. nikkoensis Okam. = *Ch. sachalinensis* Mats.

The species newly added to our fauna are as follows: 1. *Apochrysa minomoana* n. sp. 2. *Chrysocerca japonica* n. sp. 3. *Chrysopa yamamuraæ* n. sp. 4. *Ch. alba* Linne.

Apochrysa matsumuræ Okamoto.

Apochrysa matsumuræ Okamoto, Trans. Sapporo Nat. Hist. Soc., iv, p. 13, fig. I (1912).

*Nacaura*¹ *matsumuræ* Navas, Rev. Russ. d' Entom., xiii, p. 280 (1913).

Nacaura matsumuræ Okamoto, Journ. Coll. Agr., Tohoku Imp. Univ., vi, p. 53 (1914).

Kagoshima (Okamoto).

Apochrysa minomoana n. sp.

Minomo near Osaka.

Nothochrysa japonica MacLachlan.

Nothochrysa japonica M'Lach., Trans. Ent. Soc. Lond., ü, p. 182 (1875).

Hondo (west of Gifu); Shikoku (Okamoto); Kinshiu; Formosa (Petersen and Okamoto).

Parachrysa (n. g.) **olivacea** (Gerstæcker).

Nothochrysa olivacea Gerstæcker, Mitt. Neu.-Verp. u. Rüg., p. 74 (1893).

Yokohama (Gerstæcker); Nikko.

Chrysocerca japonica n. sp.

Hakone.

Chrysopa perla (Linne).

Hemerobius perla Linne, Syst. Nat., Ed. 12, p. 911 (1768).

Chrysopa perla Shneider, Monog. Chrysop., p. 136, pl. 49 (1815).

Chrysopa nigriceps Okamoto, Journ. Coll. Agri., Tohoku Imp. Univ., vi, p. 58-59 (1914).

Hondo (mountainous regions); Siberia; Europe.

Chrysopa perla intima MacLachlan.

Chrysopa intima M'Lach., Trans. Ent. Soc. Lond., p. 230 (1893).

Chrysopa perla var. *fracta* Navas, Broteria, Ser. Zool. ix., p. 39 (1910).

Saghalien; Hokkaido; Hondo (mountainous regions); Siberia.

Chrysopa lezeyi Navas.

Chrysopa lezeyi Navas, Broteria, Ser. Zool., ix, p. 42 (1910).

Sapporo, Hokkaido (Okamoto); Kofu, Hondo (Navas).

Chrysopa formosa Brauer.

Chrysopa formosa Brauer, Z. b. G., Wien, Sp. 10 (1856).

Chrysopa sapporensis Okamoto, Journ. Coll. Agr., Tohoku Imp. Univ., vi, p. 60 (1914).

Hokkaido; Hondo; Europe.

(1) The genus *Nacaura* formed by Navás for *Apochrysa matsumuræ*, is scarcely more than a sub-genus; it has nearly all of the radial cross veins connected with one another by short cross veinlets, but they are of no generic value, since they have no stability. In *A. minomoana* n. sp., some of the cross veins in radial area of fore wing are often connected with one another, as stated in its description.

Chrysopa furcifera Okamoto.

Chrysopa furcifera Okamoto, Journ. Coll. Agr., Tohoku Imp. Univ., vi, p. 61 (1914).

Hondo; Kiushiu; Loo-Choo; Formosa.

Chrysopa vulgaris microcephala Brauer.

Chrysopa microcephala Brauer, Z. b. G., Wien, Sp. 4 (1856).

Tokyo, Kyoto, Gifu; Europe.

Chrysopa vittata Wesm.

Chrysopa vittata Wesm., Bull. Acad. Brux., viii, p. 211 (1841).

Chrysopa inornata Matsumura, Journ. Coll. Agr., Tohoku Imp. Univ., iv, p. 14 (1911).

Saghalien; Hokkaido; Hondo; Europe.

Chrysopa nipponensis Okamoto.

Chrysopa nipponensis Okamoto, Journ. Coll. Agr., Tohoku Imp. Univ., vi, p. 65-66 (1914).

Hondo; Kiushiu.

Chrysopa bipunctata Burmeister.

Chrysopa bipunctata Burm., Hand b. d. Entom., ii, p. 982 (1839).

Hondo.

Chrysopa cognata MacLachlan.

Chrysopa cognata M'Lach., Linn. Soc., ix, p. 249 (1867).

Nothochrysa robusta Gerstaecker, Mitt. Ver. Neu-Vorp. u. Rug., p. 73 (1893).

Chrysopa ricciana Navas, Rev. Russ. d' Entom., x, p. 193 (1910).

Hokkaido; Hondo; Shikoku; Kiushiu; Formosa; Siberia; China; Cambodia.

Chrysopa sauteri Petersen.

Chrysopa sauteri Petersen, Ent. Mitt., ii, p. 258 (1913).

Hondo; Formosa.

Chrysopa decorata Petersen.

Chrysopa decorata Petersen, Ent. Mitt., ii, p. 260 (1913).

Hondo; Formosa.

Chrysopa matsumurae Okamoto.

Chrysopa matsumurae Okamoto, Journ. Coll. Agri., Tohoku Imp. Univ., vi, p. 68 (1914).

Hondo.

Chrysopa sachalinensis Matsumura.

Chrysopa sachalinensis Matsumura, Journ. Coll. Agr., Tohoku Imp. Univ., iv, p. 14 (1911).

Chrysopa nikkoënsis Okamoto, Journ. Coll. Agr., Tohoku Imp. Univ., vi, p. 69-70 (1914).

Saghalien; Hondo.

Chrysopa cognatella Okamoto.

Chrysopa cognatella Okamoto, Journ. Coll. Agri., Tohoku Imp. Univ., vi, p. 70-71 (1914).

Hokkaido; Hondo; Shikoku.

Chrysopa yamamurae n. sp.

Gifu.

Chrysopa alba (Linne).

Hemerobius albus L., Syst. Nat., Ed. 12, p. 911 (1766).

Chrysopa alba Steph., Ill. Brit. Ent. Mand., vi, p. 204 (1836).

Gifu (Mr. S. Yamamura Coll.); Europe.

Chrysopa kurisakiana Okamoto.

Chrysopa kurisakiana Okamoto, Journ. Coll. Agr., Tohoku Imp. Univ., vi, p. 71-72 (1914).

Hondo; Kiushiu.

DESCRIPTION OF ONE NEW GENUS AND THREE NEW SPECIES.

Apochrysa minomoana n. sp.

Head greenish, paler on face; cheek with a small black spot; anterior margin of clypeus narrowly variegated with fuscous; palpi pale. Antennae much longer than fore wing, reddish brown; basal joint rather yellowish, striped with red-brown on outer side; the second joint with blackish outer side.

Prothorax much longer than broad, with a faint whitish median line; lateral sides narrowly marked with red-brown. The rest of thorax and abdomen greenish above, with a yellowish dorsal line; the third and fourth abdominal segments varied with black on lateral sides, next four segments suffused with blackish posteriorly; underside much paler.

Legs greenish, suffused with darkish on tarsi; hind femur with a distinct black ring near its end.

Fore wing very broadly hyaline, with two blackish spots as shown in figure 1, pl. VIII; venation mostly greenish, some veins in discal and outer marginal areas black; costal cross veins mostly simple, but one or two of them furcate; radial sector with about 25 branches; inner series of graduate veinlets very irregular in arrangement; several or often one or two of the cross veins between radius and its sector are connected by short cross veinlets. Hind wing with a very small, blackish spot in stigmatic region; veins greenish except those in outer marginal area; two series of gradate veinlets present.

Length of body, 14 mm.; of antennae, 35 mm.; of fore wing, 24 mm.; of hind wing, 22 mm.; width of fore wing, 10 mm.

Two female specimens, captured by Messrs. A. Nohira and M. Shibakawa at Minomo, Prov. Settsu (near Osakō) in August and November, 1914, are in my collection.

Parachrysa n. gen.

Anterior margin of labrum entire. Antenna about as long as the body, shorter than the wings; the basal joint much dilated. Fore wing elongate, subacute at apex, basal part of the costal space narrow, gradually widened towards the middle of the wing; two gradate series of cross veins; the third cubital cell transversely, and apparently about equally divided by a vein, which is not parallel to cubitus. Hind wing with two gradate series. Abdomen of the male with a large, peculiar-shaped subgenital plate, but without paired lateral appendages.

Type: *Nothochrysa olivacea* Gerst.

So far as the wing venation is concerned, this genus closely resembles Banks' *Allochrysa*, but I think the distinction between these two genera may be looked upon as of sufficient generic value in view of the fact that, while *Parachrysa* has a large subgenital plate, *Allochrysa* is altogether devoid of it—a sort of difference analogous to that which separates *Chrysocerca* from *Chrysopa*.

Parachrysa olivacea is a very rare insect in Japan. I have only a single male specimen which I succeeded in obtaining at Nikko, on July 19, 1914.

Chrysocerca japonica n. sp.

Head pale yellow, with no marking; maxillary palpus fuscous black, few terminal joints yellowish; labial palpus yellowish. Antennae about as long as fore wings, pale yellow; terminal joints more or less suffused with fuscous.

Prothorax somewhat longer than broad; pale yellow with greenish suffusion; meso- and meta-thorax greenish yellow with a whitish longitudinal band above. Legs pale yellow; anterior tibia somewhat brownish; claws piceous or fuscous black.

Fore wing rather broad with its apex nearly rounded. Costa, subcosta and radius pale yellow; cubitus and anal veins also pale yellow, but terminally blackish; radial sector and media pale yellow, but blackish basally and terminally; cross veins exclusively blackish; branches of radial sector also blackish; pterostigma pale yellow. About twenty cross veins in costal area; inner gradate series somewhat irregular in arrangement, containing six or seven veinlets; outer series runs almost parallel to the outer margin of the wing, and is made up of some nine or ten cross veins.

Hind wing narrow; veins mostly fuscous, but radius, media, cubitus and anal veins pale yellow; cross veins mostly blackish, but those in anal area of the wing pale yellow. Inner and outer gradate series each consists of about seven cross veins.

Abdomen yellowish, somewhat fuscous on ventral side; the male with a long subgenital plate, which is covered with fine pale yellow hairs, and is rather triangular in shape when seen from below; dorsal appendage short, furnished with numerous long hairs.

Length of body, 10 mm.; of antenna, 13 mm.; of fore wing, 13 mm.; of hind wing, 11 mm.

The type is a single male specimen captured by the author at Hakone, on July 29, 1914.

***Chrysopa yamamurae* n. sp.**

Head yellowish, somewhat raised on vertex; a distinct black spot on each cheek; palpi yellowish; antennae yellow, more or less suffused with fuscous beyond middle.

Prothorax pale yellow above, suffused with fuscous or darkish on each side, with a minute blackish spot on anterior end of each lateral margin. The rest of thorax and abdomen yellowish, with a pale white median stripe above. Legs yellowish, with pale hairs; claws piceous black.

Wings hyaline. Longitudinal veins in fore wing entirely greenish yellow; costal, radial, cubital and anal cross veins and all of gradate veinlets blackish; radial sector and its branches greenish yellow, but each is blackish at base; number of gradate veinlets in the inner series 5-7, in the outer series 6-8. Hind wing with venations mostly greenish yellow; costal cross veins black, one or two radial cross veins and greater part of gradate veinlets blackish.

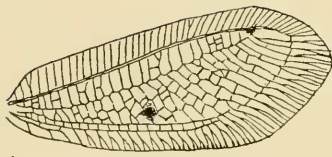
Length of body, 8-10 mm.; of fore wing, 12-14 mm.; of hind wing, 10-12 mm.

Three male and two female specimens captured by Mr. S. Yamamura at Gifu are in my collection.

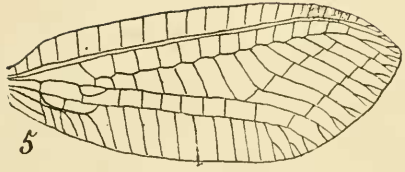
At first sight one may take the species for *Chrysopa alba*, but *yamamurae* is easily recognized by the black spot on each cheek.

EXPLANATION OF PLATE VIII.

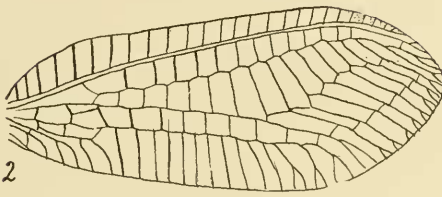
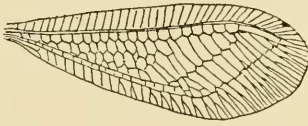
- Fig. 1. Wings of *Apochrysa minomoana* n. sp.
 Fig. 2. Fore wing of *Parachrysa olivacea* (Gerst.).
 Fig. 3. Apex of abdomen of same ♂ (from side).
 Fig. 4. Same (from below).
 Fig. 5. Fore wing of *Chrysocerca japonica* n. sp.
 Fig. 6. Apex of abdomen of same ♂ (from side).
 Fig. 7. Same (from below).
 Fig. 8. Fore wing of *Chrysopa yamamurae* n. sp.
 Fig. 9. Face of *Chrysopa yamamurae*.



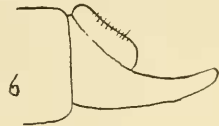
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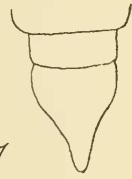
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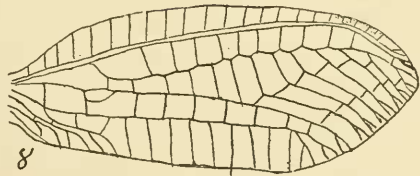
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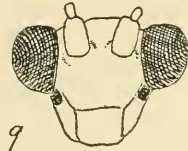
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